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10/586,829

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EXAMINER

ANDERSON, GUY G

ART UNIT

PAPER NUMBER

2883

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                       |  |
|------------------------------|--------------------------------------|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/586,829 | <b>Applicant(s)</b><br>FRANCKX ET AL. |  |
|                              | <b>Examiner</b><br>Guy G. Anderson   | <b>Art Unit</b><br>2883               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 21-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Response to Arguments***

- 1.1 Applicant's arguments with respect to claims 21-37 have been considered but are moot in view of the new ground(s) of rejection.

***Response to Amendment***

***Claim Rejections - 35 USC § 103***

- 2.1 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
- 2.2 **Claims 21 and 35 are rejected under 35 U.S.C. 103(a)** as being unpatentable over US-6527458 to Kim in view of US-6554244 to Graffenreid.

**Regarding claims 21 and 35**, Kim discloses a compact optical transceiver integrated module comprising/wherein:

21a) An optical device comprising an enclosure having a wall member defining a cavity and a sealable fiber entry portion, [Fig. 2-6, #156,158, 159, 116, 125, 156, 112, 122, 151, 115, 124, 155164, 165, 166, Col. 4-6, lines 54-67, 1-67 respectively] and an optical component located within the cavity and at least two optical fibers connected to the optical component and extending, substantially adjacent one another, through the entry portion. [Fig. 2-6, #156,158, 159, 116, 125, 156, 112, 122, 151, 115, 124, 155164, 165, 166, Col. 4-6, lines 54-67, 1-67 respectively]

35a) A method of sealingly enclosing an optical component, the method comprising the steps of: providing an enclosure having a wall member defining a cavity and a sealable fiber entry portion; arranging an optical component connected to at least two optical fibers within the cavity such that the two optical fibers extend, substantially adjacent one another, through the entry portion; and

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sealing the fiber entry portion so as to sealably retain the optical component within the cavity. [Fig. 2-6, #156,158, 159, 116, 125, 156, 112, 122, 151, 115, 124, 155164, 165, 166, Col. 4-6, lines 54-67, 1-67 respectively, see particularly Col. 5, lines 55-64]

Kim does not specifically disclose:

21b) wherein the optical component is movable within the enclosure in response to the thermal expansion or contraction of the optical fibers.

35b) wherein the optical component is movable within the enclosure in response to the thermal expansion or contraction of the optical fibers.

Graffenreid discloses a device for thermally and stably supporting miniaturized optical and electrical components within enclosures utilizing a cantilever. [Abstract, see also Fig. fig. 1-4, and Col. 1, lines 1-25, see also entire disclosure.]

Since Graffenreid is from the same field of endeavor as Kim, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the thermally stabilizing method of mounting optical components of Graffenreid with the optical device of Kim in order to provide better alignment of light beams during various temperature changes.

2.3 **Claims 22-24, 28, 30-31 are rejected under 35 U.S.C. 103(a)** as being unpatentable over US-6527458 to Kim in view of US-6554244 to Graffenreid.

**Regarding claims 22-24, 28, 30-31**, the combination of Kim and Graffenreid disclose all of the limitations of the base claims upon which claims 22-24, 28, 30-31 depend.

Kim discloses a compact optical transceiver integrated module comprising/wherein:

22. (NEW) An optical device according to Claim 21, wherein the optical fibers provide an incoming and outgoing fiber for the optical component. [Fig. 2-6, #156,158, 159, 116, 125, 156, 112, 122, 151, 115, 124, 155164, 165, 166, Col. 4-6, lines 54-67, 1-67 respectively]

23. (NEW) An optical device according to Claim 21, wherein the fiber entry portion is arranged to receive the at least two fibers substantially side-by-side as they extend through the entry portion. [Fig. 2-6, #156,158, 159, 116, 125, 156, 112, 122, 151, 115, 124, 155164, 165, 166, Col. 4-6, lines 54-67, 1-67]

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respectively]

24. (NEW) An optical device according to Claim 23, wherein the optical fibers are arranged substantially parallel to one another as they extend through the entry portion. [Fig. 2-6, #156,158, 159, 116, 125, 156, 112, 122, 151, 115, 124, 155164, 165, 166, Col. 4-6, lines 54-67, 1-67 respectively]

28. (NEW) An optical device according to Claim 27, wherein the laminate comprises a moisture resistant layer. [Fig. 2-6, #156,158, 159, 116, 125, 156, 112, 122, 151, 115, 124, 155164, 165, 166, Col. 4-6, lines 54-67, 1-67 respectively, Col. 5, lines 55-67 discloses an insulating encapsulate that laminates the device for insulation from moisture.]

30. (NEW) An optical device according to Claim 21, wherein the enclosure comprises an insulating layer. [Fig. 2-6, #156,158, 159, 116, 125, 156, 112, 122, 151, 115, 124, 155164, 165, 166, Col. 4-6, lines 54-67, 1-67 respectively, Col. 5, lines 55-67 discloses an insulating encapsulate for insulation from moisture.]

31. (NEW) An optical device according to Claim 21, wherein the optical device comprises a plurality of optical components located within the cavity, and at least two optical fibers connected to each optical component and extending, substantially adjacent one another, through the entry portion. [Fig. 2-6, #156,158, 159, 116, 125, 156, 112, 122, 151, 115, 124, 155164, 165, 166, Col. 4-6, lines 54-67, 1-67 respectively]

32. (NEW) An optical device according to Claim 31, wherein the wall member defines a plurality of fiber entry portions, such that each optical component is associated with a separate fiber entry portion through which the optical fibers to which each individual optical component is connected extend through a separate fiber entry portion to the optical fibers connected to other optical components. [Fig. 2-6, #156,158, 159, 116, 125, 156, 112, 122, 151, 115, 124, 155164, 165, 166, Col. 4-6, lines 54-67, 1-67 respectively]

2.4 **Claims 25-27, 29 are rejected under 35 U.S.C. 103(a)** as being unpatentable over US-6527458 to Kim in view of US-6554244 to Graffenreid in view of US-5195155 to

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Shimaoka and in view of US-5299273 to Evans and in view of US-6760098 to Salo and in view of US-7168863 to Yajima.

**Regarding claims 25-27, 29**, the combination of Kim and Graffenreid disclose all of the limitations of the base claims upon which claims 25-27, 29 depend.

Kim does not specifically disclose:

25. (NEW) An optical device according to Claim 21, wherein at least a portion of the enclosure is flexible.

26. (NEW) An optical device according to Claim 21, further comprising temperature control means.

27. (NEW) An optical device according to Claim 21, wherein the enclosure comprises a laminate.

29. (NEW) An optical device according to Claim 28, wherein the moisture resistant layer comprises aluminum.

Shimaoka disclose an optical module with a thermo electric cooler for temperature control. [Fig. 17, #10]

Salo discloses a refractometer optical module with a flexible sealing fro the window to the housing. [Col. 3, lines 8-27]

Evans discloses an optical fiber to laminate adapter.[Fig. 3]

Yajima discloses an optical module with aluminum being used to absorb moisture. [Col. 12, lines 15-25]

Since all of these references are from the same field of endeavor, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the various structural features of each reference with the module of Kim in order to provide better functionality such as temperature control.

2.5 **Claim 33 is rejected under 35 U.S.C. 103(a)** as being unpatentable over US-6527458 to Kim.

**Regarding claim 33**, the combination of Kim and Graffenreid disclose all of the limitations of the base claims upon which claims 33 depend.

Kim does not specifically disclose:

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33. (NEW) An optical device according to Claim 21, wherein the enclosure is of a size and shape for fitting into an optical fiber organizer tray.

However, a change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237

2.6 **Claim 36-37 is rejected under 35 U.S.C. 103(a)** as being unpatentable over US-6527458 to Kim in view of US-2004/0240804 to Mahapatra and in view of US-6151338 to Grubb in view of US-5971629 to Bloom.

**Regarding claim 36-37**, the combination of Kim and Graffenreid disclose all of the limitations of the base claims upon which claims 36-37 depend.

Kim does not specifically disclose:

36. (NEW) A method according to Claim 35, further comprising the step of providing a polymer strip adjacent the optical fibers at the entry portion prior to sealing the entry portion.

37. (NEW) A method according to Claim 35, wherein the fiber entry portion is sealed using heat and/or pressure.

Mahapatra discloses a liquid crystal polymer clad optical fiber for use in hermetic packaging wherein a polymer coating is applied to fibers to enhance strength and promote fabrication of hermetically sealed opto electronic packagers. [Abstract.]

Grubb discloses a high power laser system that can be used to solder or weld in order to seal together or merge adjacent outer polymer claddings of optical fibers. [Col. 15, lines 25-35]

Bloom discloses a method of sealing an optical fiber by spray coating a polymer coating on it. [Fig. 15, Col. 7, lines 30-40.]

Since Bloom, Grubb, Mahapatra and Kim are from the same field of endeavor, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the polymer coatings of Mahapatra and the heating technique of Grubb with the module of Kim in order to provide a more efficient hermetically sealed package. Since Kim discloses hermetic sealing techniques, no impermissible hindsight would be needed to combine the references. A PHOSITA would be able to combine the techniques in order to improve the hermetic sealing process.

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2.7 **Claim 34 is rejected under 35 U.S.C. 103(a)** as being unpatentable over US-6527458 to Kim in view of US-6850461 to Maas.

**Regarding claim 34**, the combination of Kim and Graffenreid disclose all of the limitations of the base claims upon which claims 34 depend.

Kim discloses:

34) a an optical device comprising an enclosure having a wall member defining a cavity and a sealable fiber entry portion; an optical component located within the cavity and at least two optical fibers connected to the optical component and extending, substantially adjacent one another, through the entry portion;

Kim does not specifically disclose:

34b) A fiber optic organizer tray assembly, comprising: an optical fiber organizer tray; and said enclosure being profiled for fitting into said optical fiber organizer tray.

Maas discloses a fiber optic seismic array telemetry system comprising a fiber storage tray that also stores optical components such as isolators and amplifiers. [Fig. 9, Col. 6-7, lines 66-67 and 1-7 respectively.]

Since Maas and Kim are from the same field of endeavor, it would have been obvious for one of ordinary skill in the art at the time of the invention to be motivated by the teachings of Maas in regards to placing components on a fiber storage tray and to combine those teachings with a module such as that disclosed in Kim in order to store optical modules and organize fiber simultaneously in one unit.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37



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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guy G. Anderson whose telephone number is 571.272.8045. The examiner can normally be reached on Tuesday-Saturday 1400-2200.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 571.272.2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Guy G Anderson/  
Examiner, Art Unit 2883

/Frank G Font/  
Supervisory Patent Examiner, Art Unit 2883

April 26, 2009

FGF/gga